Artemisia afra will save Africa

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https://malariaworld.org/blog/artemisia-afra-will-save-africa

A very recent paper of a South African research team shows that among 8 medicinal plants Artemisia afra has the lowest IC50 for impairing the development of late stage gametocytes (P Moyo et al., J of Ethnopharmacology, acceopted 15 March). A very important finding as not many plants have such a significant gametocytocidal effect.

It confirms the in vivo results obtained end of 2015 in a large scale, double blind randomized clinical trials in Maniema, RDCongo (see Breaking news from clinical trials with Artemisia plants) where Artemisia afra was one of the branches of the test. Artemisia herbal tea completely eliminated gametocytes but they were still present on day 28 in 10% of those treated with Coartem In 2013 already Dr Constant Kansongo in Katanga had found in a trial with 44 Plasmodium falciparum infected patients that after 7 days of treatment with 20 gr of capsules containing A afra powder the gametocytes had completely disappeared, except for one patient.

The situation is completely different for artemisinin derivatives and ACTs, it is even alarming. A paper from Mali published in February clearly shows it (AA Djimbe et al., Parasite, 2016. 23, 3). Artesunate does not clear mature gametocytes during oral artesunate treatment and does not prevent the appearance of new gametocytes. The same recrudescence with oral artemisinin monotherapy had already been observed in Vietnam in 2001 (PT Giao et al., Am J Trop Med Hyg, 2001 65 690-695). The conclusion of the authors was that artemisinin monotherapy may offer rapid recovery and fast parasite clearance, but recrudescence is frequent. For up to 20 percent of the cases on day 28, although gametocytes had completely disappeared on day 7. Extending the duration of the monotherapy from 5 to 7 days did not reduce recrudescence. A study from Kenya had also found that gametocyte carriage was much lower on day 14 than on day 28 and 42 for artemether lumefantrine, but not for dihydroartemisinin-piperaquine (P Sawa et al., J Infect Dis, 2013, 207, 1637-45). It is well known that artemisinin drugs are gametocytocidal for immature, but not mature gametocytes (GO Ghotosho et al., Mem Inst Oswaldo Cruz 2011, 106 no5). A paper of the Swiss Tropical and Public Health Institute (BJ Huho et al., Malaria Journal, 2012 11:118) comes to the conclusion that in high perennial transmission settings case management with ACT may have little impact on overall infectiousness of the human population. They even found in their study, that the most direct indicator of human-to-mosquito transmission, namely oocyst prevalence was substantially higher after ACT introduction. A study from Burkina Faso found in a recheck 12 months after a clinical trial with ACTs that the number of symptomatic malaria episodes was even slightly higher in the ACT arm than in the control arm and that after several treatments the prevalence of gametocyte carriers was the same in both arms (AB Tiono et al.,Malaria Journal 2013, 12:79). Another study found that ACT did not significantly reduce the proportion of infectious

children. Submicroscopic gametocytaemia is common after treatment and contributes considerably to mosquito infection. (JT Bousema J Infect Dis., 2006, 193, 1151-59). Because of the short half-life of artemisinin and because high doses induce dormancy in the asexual parasite, asexual forms, mostly rings, remaining after completion of ACT may develop into mature gametocytes 7-15 days later. Some patients have the first appearance of gametocytemia 4-8/day after completion of a 3 day-ACT. (Wilairatana P, et al.,Southeast Asian J Trop Med Public Health. 2010 Nov;41(6):1306-11). What worries the authors of the study from Mali is not only that similar results had been found in a study in 2002-2004, but the fact that baseline gametocyte carriage was significantly higher 6 years after deployment of ACTs in this setting. If artemisinin derivatives really enhance recrudescence and gametocyte carriage, this is indeed alarming. It would mean that ACTs will not eradicate malaria but enhance it in the long run.

When IFBV-BELHERB had raised this concern with WHO Geneva and ITG Antwerp the blunt answer received from one of the experts was: “Your arguments do not make any sense from a public health point of view ».

Artemisia afra is growing wild from The Cape to Addis Abeba.

No further need to import Nobel prize validated pharmaceutical drugs from China or Europe